

TITLE 327 WATER POLLUTION CONTROL BOARD

Proposed Rule

LSA Document #98-272

DIGEST

Adds 327 IAC 8-2.1 to establish the minimum requirements for the content of annual consumer confidence reports that community water systems shall deliver to their customers. Effective 30 days after filing with the secretary of state.

HISTORY

First Notice of Comment Period: January 1, 1999, Indiana Register (22 IR 1259).

Second Notice of Comment Period and Notice of First Hearing: April 1, 1999, Indiana Register (22 IR 2357).

Date of First Hearing: June 9, 1999.

Notice of Second Hearing: October 1, 1999, Indiana Register (23 IR 57)

Date of Second Hearing: December 8, 1999.

327 IAC 8-2.1

SECTION 1. 327 IAC 8-2.1 IS ADDED TO READ AS FOLLOWS:

Rule 2.1. Consumer Confidence Reports

327 IAC 8-2.1-1 Purpose; applicability; definitions

Authority: IC 13-13-5-1; IC 13-13-5-2; IC 13-18-16-6; IC 13-18-16-7; IC 13-18-16-9

Affected: IC 13-18-16

Sec. 1. (a) This rule establishes the minimum requirements for the content of annual reports that community water systems shall deliver to their customers. These reports shall contain information on the quality of the water delivered by the systems and characterize the risks, if any, from exposure to contaminants detected in the drinking water in an accurate and understandable manner.

(b) This rule applies only to community water systems.

(c) As used in this rule, Acustomers® means billing units or service connections to which water is delivered by a community water system.

(d) As used in this rule, Adetected® means at or above the levels prescribed by 327 IAC 8-2-4.1, 327 IAC 8-2-5.1, 327 IAC 8-2-5.5, and 327 IAC 8-2-10.1. (Water Pollution Control Board; 327 IAC 8-2.1-1)

327 IAC 8-2.1-2 Effective dates

Authority: IC 13-13-5-1; IC 13-13-5-2; IC 13-18-16-6; IC 13-18-16-7; IC 13-18-16-9

Affected: IC 13-18-16

Sec. 2. (a) Each existing community water system shall deliver its first report by October 19, 1999, its second report by July 1, 2000, and subsequent reports by July 1 annually thereafter. The first report shall contain data collected during, or prior to, calendar year 1998, as specified in section 3(d)(5) of this rule. Each report thereafter shall contain data collected during, or prior to, the previous calendar year.

(b) A new community water system shall deliver its first report by July 1 of the year after its first full calendar year in operation and annually thereafter.

(c) A community water system that sells water to another community water system shall deliver the applicable information required in section 3 of this rule to the buyer system:

**(1) no later than April 19, 1999, by April 1, 2000, and by April 1 annually thereafter;
or**

(2) on a date mutually agreed upon by the seller and the purchaser, and specifically included in a contract between the parties.

(Water Pollution Control Board; 327 IAC 8-2.1-2)

327 IAC 8-2.1-3 Content of the reports

Authority: IC 13-13-5-1; IC 13-13-5-2; IC 13-18-16-6; IC 13-18-16-7; IC 13-18-16-9

Affected: IC 13-18-16

Sec. 3. (a) Each community water system shall provide to its customers an annual report that contains the information specified in this section and section 4 of this rule.

(b) The report shall contain information on the source of the water delivered, including the following:

(1) Each report shall identify the source or sources of water delivered by the community water system by providing information on:

(A) the type of water, such as surface water or ground water; and

(B) the commonly used name, if any, and location of the body or bodies of water.

(2) If a source water assessment has been completed, the report shall notify the consumers of the availability of this information and the means to obtain it. In addition, systems are encouraged to highlight in the report significant sources of contamination in the source water area if they have readily available information. Where a system has received a source water assessment from the commissioner, the report shall include a brief summary of the systems susceptibility to potential sources of contamination, using language provided by the commissioner or written by the operator.

(c) Each report shall include the following definitions:

(1) A Maximum contaminant level goal or MCLG means the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

(2) A Maximum contaminant level or MCL means the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

(3) A report for a community water system operating under a variance or exemption issued under 327 IAC 8-2-25 shall include, A variances and exemptions means state or Environmental Protection Agency (EPA) permission not to meet an MCL or a treatment technique under certain conditions.

(4) A report that contains data on a contaminant for which the department of environmental management or EPA has set a treatment technique or an action level shall include one (1) or both of the following definitions, as applicable:

(A) A Treatment technique means a required process intended to reduce the level of a contaminant in drinking water.

(B) A Action level means the concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system shall follow.

(d) This subsection specifies the requirements for information to be included in each report for contaminants subject to mandatory monitoring, other than Cryptosporidium. It applies to the following contaminants:

(1) Contaminants subject to an MCL, action level, or treatment technique, hereafter referred to as regulated contaminants.

(2) Contaminants for which monitoring is required by 327 IAC 8-2-23, hereafter referred to as unregulated contaminants.

(3) Disinfection byproducts or microbial contaminants for which monitoring is required by 40 CFR 141.142 and 40 CFR 141.143*, except as provided in subsection (e)(1), and that are detected in the finished water.

(4) The data relating to these contaminants shall be displayed in one (1) table or in several adjacent tables. Any additional monitoring results that a community water system chooses to include in its report shall be displayed separately.

(5) The data shall be derived from data collected to comply with EPA and the department monitoring and analytical requirements during calendar year 1998 for the first report and subsequent calendar years thereafter, except the following:

(A) Where a system is allowed to monitor for regulated contaminants less often than once a year, the table or tables shall include the date and results of the most recent sampling, and the report shall include a brief statement indicating that the data presented in the report are from the most recent testing done in accordance with the regulations. No data older than five (5) years need be included.

(B) Results of monitoring in compliance with 40 CFR 141.142 and 40 CFR 141.143* need only be included for five (5) years from the date of the last sample or until any of the detected contaminants becomes regulated and subject to routine monitoring requirements, whichever comes first.

(6) For detected regulated contaminants listed in section 6(a) of this rule, the table or tables shall contain the following information:

(A) The MCL for that contaminant expressed as a number equal to or greater than one and zero tenths (1.0), as listed in section 6(a) of this rule.

(B) The MCLG for that contaminant expressed in the same units as the MCL.

(C) If there is no MCL for a detected contaminant, the table shall indicate that there is a treatment technique, or specify the action level, applicable to that contaminant, and the report shall include the definitions for treatment technique or action level, or both, as appropriate, specified in subsection (c)(4).

(D) For contaminants subject to an MCL, except turbidity and total coliforms, the highest contaminant level used to determine compliance with this rule and the range of detected levels as follows:

(i) When compliance with the MCL is determined annually or less frequently, the highest detected level at any sampling point and the range of detected levels expressed in the same units as the MCL.

(ii) When compliance with the MCL is determined by calculating a running annual average of all samples taken at a sampling point, the highest average of any of the sampling points and the range of all sampling points expressed in the same units as the MCL.

(iii) When compliance with the MCL is determined on a system-wide basis by calculating a running annual average of all samples at all sampling points, the average and range of detection expressed in the same units as the MCL.

(E) When turbidity is reported pursuant to 327 IAC 8-2-8.8, the highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits specified in 327 IAC 8-2-8.8 for the filtration technology being used. The report shall include an explanation of the reasons for measuring turbidity.

(F) For lead and copper, the ninetieth percentile value of the most recent round of sampling and the number of sampling sites exceeding the action level.

(G) For total coliform, the highest monthly:

(i) number of positive samples for systems collecting fewer than forty (40) samples per month; or

(ii) percentage of positive samples for systems collecting at least forty (40) samples per month.

(H) For fecal coliform, the total number of positive samples.

(I) The likely source or sources of detected contaminants to the best of the

operator's knowledge. Specific information regarding contaminants may be available in sanitary surveys and source water assessments, and shall be used when available to the operator. If the operator lacks specific information on the likely source, the report shall include one (1) or more of the typical sources for that contaminant listed in section 6(b) of this rule that are most applicable to the system.

(7) If a community water system distributes water to its customers from multiple hydraulically independent distribution systems that are fed by different raw water sources, the table shall contain a separate column for each service area and the report shall identify each separate distribution system. Alternatively, systems may produce separate reports tailored to include data for each service area.

(8) The table or tables shall clearly identify any data indicating violations of MCLs or treatment techniques, and the report shall contain a clear and readily understandable explanation of the violation, including the length of the violation, the potential adverse health effects, and actions taken by the system to address the violation. To describe the potential health effects, the system shall use the relevant language of section 6(c) of this rule.

(9) For detected unregulated contaminants for which monitoring is required, other than *Cryptosporidium*, the table or tables shall contain the average and range at which the contaminant was detected. The report may include a brief explanation of the reasons for monitoring for unregulated contaminants.

(e) The following information on *Cryptosporidium*, radon, and other contaminants is required:

(1) If the system has performed any monitoring for *Cryptosporidium*, including monitoring performed to satisfy the requirements of 40 CFR 141.143*, that indicates *Cryptosporidium* may be present in the source water or the finished water, the report shall include:

(A) a summary of the results of the monitoring; and

(B) an explanation of the significance of the results.

(2) If the system has performed any monitoring for radon that indicates radon may be present in the finished water, the report shall include:

(A) the results of the monitoring; and

(B) an explanation of the significance of the results.

(3) If the system has performed additional monitoring that indicates the presence of other contaminants in the finished water, the commissioner strongly encourages systems to report any results that may indicate a health concern. To determine if

results may indicate a health concern, the commissioner recommends that systems find out if EPA has proposed a National Primary Drinking Water Regulation (NPDWR) or issued a health advisory for that contaminant by calling the Safe Drinking Water Hotline at (800) 426-4791. The commissioner considers levels detected above a proposed federal or state MCL or health advisory level to indicate possible health concerns. For such contaminants, the commissioner recommends that the report includes:

(A) the results of the monitoring; and

(B) an explanation of the significance of the results noting the existence of a health advisory or a proposed regulation.

(f) In addition to the requirements of subsection (d)(9), the report shall note any violation that occurred during the year covered by the report of a requirement listed in this subsection, and include a clear and readily understandable explanation of the violation, any potential adverse health effects, and the steps the system has taken to correct the violation. The violations that shall be included are as follows:

(1) Monitoring and reporting of compliance data.

(2) Filtration and disinfection prescribed by 327 IAC 8-2-8.5 and 327 IAC 8-2-8.6. For systems that have failed to install adequate filtration or disinfection equipment or processes, or have had a failure of such equipment or processes that constitutes a violation, the report shall include the following language as part of the explanation of potential health effects, *An inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.*

(3) Lead and copper control requirements prescribed by 327 IAC 8-2-36 through 327 IAC 8-2-47. For systems that fail to take one (1) or more actions prescribed by 327 IAC 8-2-36(d) or 327 IAC 8-2-40 through 327 IAC 8-2-43, the report shall include the applicable language from section 6(c) of this rule for lead or copper, the highest monthly or both.

(4) Treatment techniques for acrylamide and epichlorohydrin prescribed by 327 IAC 8-2-3.5. For systems that violate 327 IAC 8-2-32, the report shall include the relevant language from section 6(c) of this rule.

(5) Record keeping of compliance data.

(6) Special monitoring requirements prescribed by 327 IAC 8-2-21 or 327 IAC 8-2-23.

(7) Violation of the terms of a variance, an exemption, or an administrative or judicial order.

(g) If a system is operating under a variance or an exemption issued under 327 IAC 8-2-25 through 327 IAC 8-2-28, the report shall contain the following information:

- (1) An explanation of the reasons for the variance or exemption.**
- (2) The date on which the variance or exemption was issued.**
- (3) A brief status report on the steps the system is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance or exemption.**
- (4) A notice of any opportunity for public input into the review, or renewal, of the variance or exemption.**

(h) Additional information that shall be contained in the report is as follows:

(1) The report shall contain a brief explanation regarding contaminants that may reasonably be expected to be found in drinking water, including bottled water. This explanation may include the language in clauses (A) through (C), or systems may use their own comparable language. The report shall also include the language of clause (D). The language is as follows:

(A) The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals, and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

(B) Contaminants that may be present in source water include the following:

(i) Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

(ii) Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban stormwater run-off, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

(iii) Pesticides and herbicides, that may come from a variety of sources, such as agriculture,

urban stormwater run-off, and residential uses.

(iv) Organic chemical contaminants, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater run-off, and septic systems.

(v) Radioactive contaminants, that can be naturally-occurring or be the result of oil and gas production and mining activities.

(C) In order to ensure that tap water is safe to drink, the department and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Federal Drug Administration (FDA) regulations establish limits for contaminants in bottled water that shall provide the same protection for public health.

(D) Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

(2) The report shall include the telephone number of the owner, operator, or designee of the community water system as a source of additional information concerning the report.

(3) In communities with a large proportion of non-English speaking residents, defined as twenty percent (20%) or more of the residents speaking the same language other than English, the report shall contain information in the appropriate language or languages regarding the importance of the report or contain a telephone number or address where such residents may contact the system to obtain a translated copy of the report or assistance in the appropriate language.

(4) The report shall include information, which may include, but is not limited to, time and place of regularly scheduled board meetings, about opportunities for public participation in decisions that may affect the quality of water.

(5) The systems may include such additional information as they deem necessary for public education consistent with, and not detracting from, the purpose of the report.

***The Code of Federal Regulations (CFR) citations are incorporated by reference into this rule and are available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 or from the Indiana Department of Environmental Management, Office**

of Water Management, Indiana Government Center- North, Twelfth Floor, Room 1255, 100 North Senate Avenue, Indianapolis, Indiana 46206. (*Water Pollution Control Board; 327 IAC 8-2.1-3*)

327 IAC 8-2.1-4 Required additional health information

Authority: IC 13-13-5-1; IC 13-13-5-2; IC 13-18-16-6; IC 13-18-16-7; IC 13-18-16-9

Affected: IC 13-18-16

Sec. 4. (a) All reports shall prominently display the language: *Some people may be more vulnerable to contaminants in drinking water than the general population.*

Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people shall seek advice about drinking water from their health care providers. EPA and CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

(b) If a system detects arsenic at levels above twenty-five (25) micrograms per liter, but below the MCL, it shall do one (1) of the following:

(1) Include in its report a short informational statement about arsenic, such as: *EPA is reviewing the drinking water standard for arsenic because of special concerns that it may not be stringent enough. Arsenic is a naturally-occurring mineral known to cause cancer in humans at high concentrations.*

(2) Write its own educational statement, if such statement is written in consultation with the commissioner, and include that statement in the report.

(c) If a system detects nitrate at levels above five milligrams per liter (5 mg/l), but below the MCL it shall do one (1) of the following:

(1) Include in its report, a short informational statement about the effects of nitrate on children using language such as: *Nitrate in drinking water at levels above ten (10) parts per million is a health risk for infants of less than six (6) months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, seek advice from your health care provider.*

(2) Write its own educational statement, if such statement is written in consultation with the commissioner, and include that statement in the report.

(d) If a system detects lead above the action level in more than five percent (5%), but fewer than ten percent (10%) of homes sampled, it shall do one (1) of the following:

(1) Include in its report a short informational statement about the special impact of lead on children using language such as, "Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for thirty (30) seconds to two (2) minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline at (800) 426-4791."

(2) Write its own educational statement, if such statement is written in consultation with the commissioner, and include that statement in the report.

(e) If a system detects total trihalomethanes above eight-hundredths (0.08) milligrams per liter, but below the MCL in 327 IAC 8-2-5(a), as an annual average, monitored and calculated under the provisions of 327 IAC 8-2-5.3, it shall include the health effects language in section 6(c)(5)(S) of this rule. (Water Pollution Control Board; 327 IAC 8-2.1-4)

327 IAC 8-2.1-5 Report delivery; record keeping

Authority: IC 13-13-5-1; IC 13-13-5-2; IC 13-18-16-6; IC 13-18-16-7; IC 13-18-16-9

Affected: IC 13-18-16

Sec. 5. (a) Each community water system shall mail or otherwise directly deliver one (1) copy of the consumer confidence report to each customer.

(b) The system shall make a good faith effort to reach consumers who do not get water bills, using means recommended by the commissioner. The commissioner expects that an adequate good faith effort will be tailored to the consumers who are served by the system, but are not bill-paying customers, such as renters or workers. A good faith effort to reach consumers may include, but is not limited to, a mix of methods appropriate to the particular system, including any of the following:

- (1) Posting the reports on the Internet.**
- (2) Mailing to postal patrons in metropolitan areas.**
- (3) Advertising the availability of the report in the news media.**
- (4) Publication in a local newspaper.**
- (5) Posting in public places such as cafeterias or lunch rooms of public buildings.**
- (6) Delivery of multiple copies for distribution by single-biller customers, such as apartment buildings or large private employers.**

(7) Delivery to community organizations.

(c) No later than the date the system is required to distribute the report to its customers, each community water system shall mail a copy of the report to the department, followed within three (3) months by a certification that the report has been distributed to customers, and that the information is correct and consistent with the compliance monitoring data previously submitted to the commissioner.

(d) No later than the date the system is required to distribute the report to its customers, each community water system shall deliver the report to any other agency or clearinghouse identified by the commissioner, including the county health department or departments serving the county or counties where the systems distribution system is located.

(e) Each community water system shall make its reports available to the public upon request.

(f) Each community water system serving one hundred thousand (100,000) or more persons shall post its current years report to a publicly-accessible site on the Internet.

(g) All community water systems shall retain copies of their consumer confidence report for no less than five (5) years. *(Water Pollution Control Board; 327 IAC 8-2.1-5)*

327 IAC 8-2.1-6 Other required information

Authority: IC 13-13-5-1; IC 13-13-5-2; IC 13-18-16-6; IC 13-18-16-7; IC 13-18-16-9

Affected: IC 13-18-16

Sec. 6. (a) In order to convert MCLs to numbers greater than or equal to one and zero- tenths (1.0) for the required table referenced in section 3 of this rule, all community water systems shall use the following table:

Table 53-1: Converting MCL Compliance Values for Consumer Confidence Reports

Contaminant	MCL in Compliance Units (mg/l)	multiply by...	MCL in CCR Units	MCLG in CCR Units
Microbiological Contaminants				

1. Total coliform bacteria			Presence of coliform bacteria in \$5% of monthly samples for systems serving > 33,000 customers or presence of coliform bacteria in more than one sample per month for systems serving # 33,000 customers.	0
2. Fecal coliform and E. coli			A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive.	0
3. Turbidity			TT (NTU)	n/a
Radioactive contaminants				
4. Beta/photon emitters	4 mrem/year		4 mrem/year	0
5. Alpha emitters	15 pCi/l		15 pCi/l	0

6. Combined radium	5 pCi/l		5 pCi/l	0
Inorganic contaminants				
7. Antimony	0.006	1,000	6 ppb	6
8. Arsenic	0.05	1,000	50 ppb	n/a
9. Asbestos	7 MFL		7 MFL	7
10. Barium	2		2 ppm	2
11. Beryllium	0.004	1,000	4 ppb	4
12. Cadmium	0.005	1,000	5 ppb	5
13. Chromium	0.1	1,000	100 ppb	100
14. Copper	AL = 1.3		AL = 1.3 ppm	1.3
15. Cyanide	0.2	1,000	200 ppb	200
16. Fluoride	4		4 ppm	4
17. Lead	AL = 0.015	1,000	AL = 15 ppb	0
18. Mercury (inorganic)	0.002	1,000	2 ppb	2
19. Nitrate (as nitrogen)	10		10 ppm	10
20. Nitrite (as nitrogen)	1			1

			1 ppm	
21. Selenium	0.05	1,000	50 ppb	50
22. Thallium	0.002	1,000	2 ppb	0.5
Synthetic organic contaminants including pesticides and herbicides				
23. 2,4-D	0.07	1,000	70 ppb	70
24. 2,4,5-TP (silvex)	0.05	1,000	50 ppb	50
25. Acrylamide			TT	0
26. Alachlor	0.002	1,000	2 ppb	0
27. Atrazine	0.003	1,000	3 ppb	3
28. Benzo(a)pyrene (PAH)	0.0002	1,000,000	200 ppt	0
29. Carbofuran	0.04	1,000	40 ppb	40
30. Chlordane	0.002	1,000	2 ppb	0
31. Dalapon	0.2	1,000	200 ppb	200
32. Di(2-ethylhexyl)adipate	4	1,000	400 ppb	400
33. Di(2-ethylhexyl)phthalate	0.006	1,000	6 ppb	0
34. Dibromochloropropane	0.0002	1,000,000	200 ppt	0
35. Dinoseb	0.007	1,000	7 ppb	7
36. Diquat	0.02	1,000	20 ppb	20
37. Dioxin (2,3,7,8-TCDD)	0.00000003	1,000,000,000	30 ppq	0
38. Endothall	0.1	1,000	100 ppb	100
39. Endrin	0.002	1,000	2 ppb	2

40. Epichlorohydrin			TT	0
41. Ethylene dibromide	0.00005	1,000,000	50 ppt	0
42. Glyphosate	0.7	1,000	700 ppb	700
43. Heptachlor	0.0004	1,000,000	400 ppt	0
44. Heptachlor epoxide	0.0002	1,000,000	200 ppt	0
45. Hexachlorobenzene	0.001	1,000	1 ppb	0
46. Hexachlorocyclopentadiene	0.05	1,000	50 ppb	50
47. Lindane	0.0002	1,000	200 ppt	200
48. Methoxychlor	0.04	1,000	40 ppb	40
49. Oxamyl (vydate)	0.2	1,000	200 ppb	200
50. PCBs (polychlorinated biphenyls)	0.0005	1,000,000	500 ppt	0
51. Pentachlorophenol	0.001	1,000	1 ppb	0
52. Picloram	0.5	1,000	500 ppb	500
53. Simazine	0.004	1,000	4 ppb	4
54. Toxaphene	0.003	1,000	3 ppb	0
Volatile organic contaminants				
55. Benzene	0.005	1,000	5 ppb	0
56. Carbon tetrachloride	0.005	1,000	5 ppb	0
57. Chlorobenzene	0.1	1,000	100 ppb	100
58. o-Dichlorobenzene	0.6	1,000	600 ppb	600
59. p-Dichlorobenzene	0.075	1,000	75 ppb	75

60. 1,2-Dichloroethane	0.005	1,000	5 ppb	0
61. 1,1-Dichloroethylene	0.007	1,000	7 ppb	7
62. cis-1,2-Dichloroethylene	0.07	1,000	70 ppb	70
63. trans-1,2-Dichloroethylene	0.1	1,000	100 ppb	100
64. Dichloromethane	0.005	1,000	5 ppb	0
65. 1,2-Dichloropropane	0.005	1,000	5 ppb	0
66. Ethylbenzene	0.7	1,000	700 ppb	700
67. Styrene	0.1	1,000	100 ppb	100
68. Tetrachloroethylene	0.005	1,000	5 ppb	0
69. 1,2,4-Trichlorobenzene	0.07	1,000	70 ppb	70
70. 1,1,1-Trichloroethane	0.2	1,000	200 ppb	200
71. 1,1,2-Trichloroethane	0.005	1,000	5 ppb	3
72. Trichloroethylene	0.005	1,000	5 ppb	0
73. TTHMs (total trihalomethanes)	0.1	1,000	100 ppb	0
74. Toluene	1		1 ppm	1
75. Vinyl chloride	0.002	1,000	2 ppb	0
76. Xylenes	10		10 ppm	10

Key:

AL = Action level.

MCL
= **Maximum
contaminant
level.**

MCLG = Maximum contaminant level goal.

MFL = Million fibers per liter.

mrem/year = Millirems per year (a measure of radiation absorbed by the body).

NTU = Nephelometric turbidity units.

pCi/l = Picocuries per liter (a measure of radioactivity).

ppm = Parts per million, or milligrams per liter (mg/l).

ppb = Parts per billion, or micrograms per liter (µg/l).

ppt = Parts per trillion, or nanograms per liter (ng/l).

ppq = Parts per quadrillion, or picograms per liter (pg/l).

TT = Treatment technique.

(b) In order to show potential sources of contamination for the table required by section 3 of this rule, all community water systems shall use the following table:

Table 53-2: Regulated Contaminants

Contaminant (units)	MCLG	MCL	Major Sources in Drinking Water
Microbiological contaminants			
1. Total coliform bacteria	0	Presence of coliform bacteria in 5% of monthly samples for systems serving > 33,000 customers or presence of coliform bacteria in more than one	Naturally present in the environment.

		sample per month for systems serving # 33,000 customers.	
2. Fecal coliform and E. coli	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive	Human and animal fecal waste.
3. Turbidity	n/a	TT	Soil run-off.
Radioactive contaminants			
4. Beta/photon emitters (mrem/year)	0	4	Decay of natural and man-made deposits.
5. Alpha emitters (pCi/l)	0	15	Erosion of natural deposits.
6. Combined radium (pCi/l)	0	5	Erosion of natural deposits.
Inorganic contaminants			
7. Antimony (ppb)	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.
8. Arsenic (ppb)	n/a	50	Erosion of natural deposits; run-off from orchards; run-off from glass and electronics production wastes.
9. Asbestos (MFL)	7	7	Decay of asbestos cement water mains; erosion of natural deposits.

10. Barium (ppm)	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
11. Beryllium (ppb)	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries.
12. Cadmium (ppb)	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; run-off from waste batteries and paints.
13. Chromium (ppb)	100	100	Discharge from steel and pulp mills; erosion of natural deposits.
14. Copper (ppm)	1.3	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
15. Cyanide (ppb)	200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories.
16. Fluoride (ppm)	4	4	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories.
17. Lead (ppb)	0	AL = 15	Corrosion of household plumbing systems; erosion of natural deposits.
18. Mercury (inorganic) (ppb)	2	2	Erosion of natural deposits; discharge from refineries and factories; run-off from landfills; run-off from cropland.
19. Nitrate (as nitrogen) (ppm)	10	10	Run-off from fertilizer use; leaching from septic tanks, sewage; erosion of natural

			deposits.
20. Nitrite (as nitrogen) (ppm)	1	1	Run-off from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
21. Selenium (ppb)	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
22. Thallium (ppb)	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories.
Synthetic organic contaminants, including pesticides and herbicides			
23. 2,4-D (ppb)	70	70	Run-off from herbicide used on row crops.
24. 2,4,5-TP (Silvex) (ppb)	50	50	Residue of banned herbicide.
25. Acrylamide	0	TT	Added to water during sewage/wastewater treatment.
26. Alachlor (ppb)	0	2	Run-off from herbicide used on row crops.
27. Atrazine (ppb)	3	3	Run-off from herbicide used on row crops.
28. Benzo(a)pyrene (PAH) (ppt)	0	200	Leaching from linings of water storage tanks and distribution lines.
29. Carbofuran (ppb)	40	40	Leaching of soil fumigant used on rice and alfalfa.
30. Chlordane (ppb)	0	2	Residue of banned termiticide.
31. Dalapon (ppb)	200	200	Run-off from herbicide used on rights-of-way.

32. Di(2-ethylhexyl)adipate (ppb)	400	400	Discharge from chemical factories.
33. Di(2-ethylhexyl)phthalate (ppb)	0	6	Discharge from rubber and chemical factories.
34. Dibromochloropropane (ppt)	0	200	Run-off/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards.
35. Dinoseb (ppb)	7	7	Run-off from herbicide used on soybeans and vegetables.
36. Diquat (ppb)	20	20	Run-off from herbicide use.
37. Dioxin (2,3,7,8-TCDD) (ppq)	0	30	Emissions from waste incineration and other combustion; discharge from chemical factories.
38. Endothall (ppb)	100	100	Run-off from herbicide use.
39. Endrin (ppb)	2	2	Residue of banned insecticide.
40. Epichlorohydrin	0	TT	Discharge from industrial chemical factories; an impurity of same water treatment chemicals.
41. Ethylene dibromide (ppt)	0	50	Discharge from petroleum refineries.
42. Glyphosate (ppb)	700	700	Run-off from herbicide use.
43. Heptachlor (ppt)	0	400	Residue of banned termiticide.
44. Heptachlor epoxide (ppt)	0	200	Breakdown of heptachlor.
45. Hexachlorobenzene (ppb)	0	1	Discharge from metal refineries and agricultural chemical factories.
46. Hexachlorocyclopentadiene (ppb)	50	50	Discharge from chemical factories.
47. Lindane (ppt)	200	200	Run-off/leaching from insecticide used on cattle,

			lumber, gardens.
48. Methoxychlor (ppb)	40	40	Run-off/leaching from insecticide used on fruits, vegetables, alfalfa, livestock.
49. Oxamyl (vydate) (ppb)	200	200	Run-off/leaching from insecticide used on apples, potatoes, and tomatoes.
50. PCBs (polychlorinated biphenyls) (ppt)	0	500	Run-off from landfills; discharge of waste chemicals.
51. Pentachlorophenol (ppb)	0	1	Discharge from wood preserving factories.
52. Picloram (ppb)	500	500	Herbicide run-off.
53. Simazine (ppb)	4	4	Herbicide run-off.
54. Toxaphene (ppb)	0	3	Run-off/leaching from insecticide used on cotton and cattle.
Volatile organic contaminants			
55. Benzene (ppb)	0	5	Discharge from factories; leaching from gas storage tanks and landfills.
56. Carbon tetrachloride (ppb)	0	5	Discharge from chemical plants and other industrial activities.
57. Chlorobenzene (ppb)	100	100	Discharge from chemical and agricultural chemical factories.
58. o-Dichlorobenzene (ppb)	600	600	Discharge from industrial chemical factories.
59. p-Dichlorobenzene (ppb)	75	75	Discharge from industrial chemical factories.
60. 1,2-Dichloroethane (ppb)	0	5	Discharge from industrial chemical factories.

61. 1,1-Dichloroethylene (ppb)	7	7	Discharge from industrial chemical factories.
62. cis-1,2-Dichloroethylene (ppb)	70	70	Discharge from industrial chemical factories.
63. trans-1,2-Dichloroethylene (ppb)	100	100	Discharge from industrial chemical factories.
64. Dichloromethane (ppb)	0	5	Discharge from pharmaceutical and chemical factories.
65. 1,2-Dichloropropane (ppb)	0	5	Discharge from industrial chemical factories.
66. Ethylbenzene (ppb)	700	700	Discharge from petroleum refineries.
67. Styrene (ppb)	100	100	Discharge from rubber and plastic factories; leaching from landfills.
68. Tetrachloroethylene (ppb)	0	5	Leaching from PVC pipes; discharge from factories and dry cleaners.
69. 1,2,4-Trichlorobenzene (ppb)	70	70	Discharge from textile-finishing factories.
70. 1,1,1-Trichloroethane (ppb)	200	200	Discharge from metal degreasing sites and other factories.
71. 1,1,2-Trichloroethane (ppb)	3	5	Discharge from industrial chemical factories.
72. Trichloroethylene (ppb)	0	5	Discharge from metal degreasing sites and other factories.
73. TTHMs (total trihalomethanes) (ppb)	0	100	Byproduct of drinking water chlorination.
74. Toluene (ppm)	1	1	Discharge from petroleum factories.
75. Vinyl chloride (ppb)	0	2	Leaching from PVC piping; discharge from plastics factories.

76. Xylenes (ppm)	10	10	Discharge from petroleum factories; discharge from chemical factories.
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Key:

AL = Action level.

MCL
=
**Maximum
contaminant
level.**

MCLG = Maximum contaminant level goal.

MFL = Million fibers per liter.

mrem/year = millirems per year (a measure of radiation absorbed by the body).

NTU = Nephelometric turbidity units.

pCi/l = Picocuries per liter (a measure of radioactivity).

ppm = Parts per million, or milligrams per liter (mg/l).

ppb = Parts per billion, or micrograms per liter (µg/l).

ppt = Parts per trillion, or nanograms per liter (ng/l).

ppq = Parts per quadrillion, or picograms per liter (pg/l).

TT = Treatment technique.

(c) If there is a violation referenced in section 3 of this rule and health effects language is required, the following language shall be used:

(1) For microbiological contaminants, the following language shall be used:

(A) Total coliform. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

(B) Fecal coliform/E. coli. Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with animal or

human wastes. Microbes in these wastes can cause short term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.

(C) Turbidity. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

(2) For radioactive contaminants, the following language shall be used:

(A) Beta/photon emitters. Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.

(B) Alpha emitters. Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.

(C) Combined radium 226/228. Some people who drink water containing radium 226 or 228 in excess of the MCL over many years have an increased risk of getting cancer.

(3) For inorganic contaminants, the following language shall be used:

(A) Antimony. Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.

(B) Arsenic. Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

(C) Asbestos. Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.

(D) Barium. Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

(E) Beryllium. Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.

(F) Cadmium. Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.

(G) Chromium. Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.

(H) Copper. Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease shall consult their personal doctor.

(I) Cyanide. Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.

(J) Fluoride. Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth.

(K) Lead. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

(L) Mercury (inorganic). Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.

(M) Nitrate. Infants below the age of six (6) months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath, and blue-baby syndrome.

(N) Nitrite. Infants below the age of six (6) months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath, and blue-baby syndrome.

(O) Selenium. Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many

years could experience hair or fingernail loss, numbness in fingers or toes, and problems with their circulation.

(P) Thallium. Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.

(4) For synthetic organic contaminants, including pesticides and herbicides, the following language shall be used:

(A) 2,4-D. Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.

(B) 2,4,5-TP (silvex). Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.

(C) Acrylamide. Some people who drink water containing a high level of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.

(D) Alachlor. Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.

(E) Atrazine. Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.

(F) Benzo(a)pyrene (PAH). Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.

(G) Carbofuran. Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.

(H) Chlordane. Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.

(I) Dalapon. Some people who drink water containing dalapon well in

excess of the MCL over many years could experience major kidney changes.

(J) Di(2-ethylhexyl)adipate. Some people who drink water containing di(2-ethylhexyl)adipate well in excess of the MCL over many years could experience general toxic effects or reproductive difficulties.

(K) Di(2-ethylhexyl)phthalate. Some people who drink water containing di(2-ethylhexyl)phthalate in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.

(L) Dibromochloropropane (DBCP). Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.

(M) Dinoseb. Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.

(N) Dioxin (2,3,7,8-TCDD). Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.

(O) Diquat. Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.

(P) Endothall. Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.

(Q) Endrin. Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.

(R) Epichlorohydrin. Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.

(S) Ethylene dibromide. Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.

(T) Glyphosate. Some people who drink water containing glyphosate in

excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.

(U) Heptachlor. Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.

(V) Heptachlor epoxide. Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.

(W) Hexachlorobenzene. Some people who drink water containing hexachlorobenzene in excess of the MCL over many years may experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.

(X) Hexachlorocyclopentadiene. Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.

(Y) Lindane. Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.

(Z) Methoxychlor. Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.

(AA) Oxamyl (vydate). Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.

(BB) PCBs (polychlorinated biphenyls). Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.

(CC) Pentachlorophenol. Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.

(DD) Picloram. Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their

liver.

(EE) Simazine. Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.

(FF) Toxaphene. Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.

(5) For volatile organic contaminants, the following language shall be used:

(A) Benzene. Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.

(B) Carbon tetrachloride. Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

(C) Chlorobenzene. Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.

(D) o-Dichlorobenzene. Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.

(E) p-Dichlorobenzene. Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.

(F) 1,2-Dichloroethane. Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years have an increased risk of getting cancer.

(G) 1,1-Dichloroethylene. Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

(H) cis-1,2-Dichloroethylene. Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

(I) trans-1,2-Dichloroethylene. Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.

(J) Dichloromethane. Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.

(K) 1,2-Dichloropropane. Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increase risk of getting cancer.

(L) Ethylbenzene. Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.

(M) Styrene. Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.

(N) Tetrachloroethylene. Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.

(O) 1,2,4-Trichlorobenzene. Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.

(P) 1,1,1-Trichloroethane. Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.

(Q) 1,1,2-Trichloroethane. Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.

(R) Trichloroethylene. Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

(S) Total trihalomethanes (TTHMs). Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems,

and may have an increased risk of getting cancer.

(T) Toluene. Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.

(U) Vinyl chloride. Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.

(V) Xylenes. Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

(Water Pollution Control Board; 327 IAC 8-2.1-6)